

METHOD AND APPARATUS FOR READING REPORTER LABELED BEADS

Abstract of the Disclosure

- Combinatorially-synthesized deoxyribonucleic acid (DNA) oligonucleotides
- 5 attached to encoded beads that are hybridized to amplified and labeled genomic DNA or ribonucleic acid (RNA) are analyzed using a flow imaging system. Oligonucleotides and corresponding reporters are bound to the surfaces of a plurality of small beads such that different beads bear different oligo sequences. Each bead bears a unique optical signature comprising a predefined number of unique reporters, where each reporter
- 10 comprises a predefined combination of different fluorochromes. The composite spectral signature in turn identifies the unique nucleotide sequence of its attached oligo chains. This optical signature is rapidly decoded using an imaging system to discriminate the different reporters attached to each bead in a flow in regard to color and spatial position on the bead.